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A NEW SPECIES OF XANTHOSTEMON (MYRTACEAE) FROM NATUNA ISLANDS, INDONESIA

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ABSTRACT

SEDAYU, A. 2009. A new species of *Xanthostemon (Myrtaceae)* from Natuna Islands, Indonesia. *Reinwardtia* 12(5): 447–449. — A new species of *Xanthostemon*, *X. natunae* was collected from Natuna Islands, Indonesia, outside the previous known westernmost distribution limit in Palawan (*X. speciosus*). Its differences with *X. confertiflorus* Merr. (Celebes) are discussed.

Key words: *Myrtaceae,* Natuna Islands, *Xanthostemon.*

ABSTRAK

SEDAYU, A. 2009. Satu jenis baru *Xanthostemon (Myrtaceae)* dari P. Natuna, Indonesia. *Reinwardtia* 12(5): 447–449. —Jenis *Xanthostemon* baru, *X. natunae* ditemukan di Kepulauan Natuna, Indonesia. Lokasi tumbuh jenis baru tersebut jauh di luar distribusi paling barat marga *Xanthostemon*, yaitu *X. speciosus* yang berada di Palawan. Perbedaan karakter *X. natunae* dengan *X. confertiflorus* Merr. yang berasal dari Sulawesi didiskusikan.

Kata kunci: *Myrtaceae*, Kepulauan Natuna, *Xanthostemon.*

INTRODUCTION

During a field trip to access the population structure and habitat of *Presbytis natunae*, an endemic and endangered primate species in Natuna Islands, Indonesia, January 2003, two Myrtaceous specimens were collected from the study area. Pre-identification at Herbarium Bogoriense (BO) showed that the two specimens have close affinities with *Xanthostemon confertiflorum* Merr. The first specimen is a fruiting plant, with its three-locular dehiscing capsule revealed its identity as *Xanthostemon*. The second specimen is a sterile specimen taken from a rather young branch. Further investigations resulted in the conclusion that the Natuna Islands collections represent a new species of *Xanthostemon*, described here as *X. natunae*.

Xanthostemon natunae A. Sedayu, *sp. nov.* (Fig. 1A-D).

A *Xanthostemon confertifloro* Merr. ramulis foliisque pubescentibus, capsulis majoribus et sulcatis differt. — Typus: Natuna Islands, Pulau Natuna Besar, Gunung Sekunyam, 03° 39' 883" N, 108° 14' 756" E, *F.N. Rangkuti, S.M. Leksono & A. Sedayu PI0240* (BO-Holotype).

Tree up to 10 m, with diameter above 10 cm (PI0240 is 14.3 cm, ST0239 is 17.8 cm); bark flaking covered with reddish “dust” (this dust probably comes from shedding waxy substance, possibly cuticles, similar to those found on the twig and base of petiole); young stems with minute trichomes; latex absent. *Leaves* alternate; ovate or obovate in older specimen, 14 cm long x 7.5 cm wide or smaller (7–10 cm long x 4–5 cm wide) in older specimen; petiole 0.3–10 mm long x 1–2 mm wide; the younger are covered with trichomes; base acute, abaxially occasionally covered with trichomes; apex acute to bluntly obtuse or mostly rounded in older specimens; margin in young leaf with trichomes; midrib prominent abaxially, basally covered with trichomes and cuticles; lateral nerves 15 pairs on younger (bigger) leaf or 11–15 pairs on older (smaller) leaf; intramarginal vein to 5 mm from margin on younger (bigger) leaf or 1–2 mm on older (smaller) leaf; lamina venation reticulate, with blackish glandular dots inside the reticulations; glandular dots raised adaxially. *Trichomes* very minute, to 0.1 mm long (Fig. 1B), probably covering the whole twig and abaxial surface of lamina and subsequently shedding away. *Cuticle* covers twigs, petioles and lamina, subsequently degrades into a whitish waxy substance towards the basal portion of lamina/twigs. *Inflorescence* axillary; flower not seen; pedicel 6 mm. *Fruit* capsule, hemi inferior, arranged most likely in 3s, but seen as in pairs, as the third fruit might had been lost, globose or subglobose, 14 mm long x 18 mm diameter when dehiscing, loculicidally dehiscing, 3 locular, each with dividing placenta, making up of (pseudo) 6-celled capsule (Fig. 1D), exocarp scabrid, lined with longitudinal sulci (Fig. 1C), the mesocarp lignified, shiny; placenta axillary, oblique, almost reach to the inner wall of the loculli; hypanthium cup-shaped, enclosing 1/3 of capsule, 6 mm high x 14 mm diameter, base concave at the insertion of pedicel; calyx 5 lobes, apex acuminate; staminal remains between calyx and capsule. *Seed* not seen.

Notes. Comparison to *X. confertiflorus* Merr.: The specimens examined were pre-identified as *X. confertiflorus Merr.* as this species is the westernmost *Xanthostemon* species in Indonesia, available at BO. Close examination showed some differences from *X. confertiflorus* as described by Merrill (1952). In BO, there are only three specimens of *X. confertiflorus*, all from Celebes (Soroako: *W. Meijer 11090*, Soroako, Luwu: *Ramlanto Ram160*, Kabaena: *McDonald & Ismail 3854*). The leaf shape outline is similar between the Natuna and Celebes specimens, but other attributes differ:

1. The presence of trichomes on the young twigs, petiole and abaxial surface of the lamina of the Natuna specimens which is not recorded by Merrill for *X. confertiflorus*: "*Ut videtur arbor vel arbor parva omnino glabra*" (Merrill, 1952).
2. Axillary inflorescence in the Natuna materials. In *X. confertiflorus* Merr. the inflorescense appeared terminal (pseudoterminal). Wilson (1990) mentioned that in *Xanthostemon*, the inflorescence is always axillary or pseudoterminal.
3. Bigger capsule compared to *X. confertiflorus* Merr. In *X. confertiflorus* Merr. (W. Meijer 11090), the capsule is 10 mm long (from the base of calyx) x 13 mm diameter when dehiscing, as almost exactly described by Merrill (1952). In PI0240 the capsule is 14 mm long x 18 mm diameter when dehiscing. As the overall size of the capsule is bigger than *X. confertiflorus* Merr., the calyx and the placenta are of bigger size as well. The placenta is long, almost reaching to the inner wall of the loculi, unlike *X. confertiflorus* Merr., which only shortly protruded from the central axis.
4. The presence of sulci along the capsule exocarp surface, which is absent in *X. confertiflorus* Merr.

Ecology and Distribution. Politically the Natuna Islands are included in Riau Islands Province, however, geographically included in the Borneo group, as they are situated at its westernmost extremity. Natuna Besar is the main and biggest island of the group; the whole is extensively exploited for its oil and natural gas. Forested areas are left at some unwanted lands as lowland freshwater swamp and *kerangas* and at the slopes of hills and mountain (the highest is Mt. Ranai, 1000 m alt.). No nature conservation scheme is set in the surrounding area.

The specimens are collected from a slope of Gunung Sekunyam, Natuna Besar Island, Indonesia at 350 m altitude (03° 39' 883" N, 108° 14' 756" E). The surrounding habitat is still considered as lowland mixed forest, which suffered from quite recent commercial logging. The last comprehensive botanical excursion in the area was undertaken by Van Steenis & Henderson, but the presence of *Xanthostemon* was not recorded (Steenis, 1932).

The genus *Xanthostemon* consists of about 45 species, distributed in Philippines, New Guinea, Solomon Islands, 19 endemic species in New Caledonia (Dawson, 1992), 13 species in Australia (Wilson, 1990) and westward toward Palawan. In Indonesia (Celebes), it is represented by only one species: *X. confertiflorus* Merr. (Merrill, 1952). Despite numerous biological and botanical excursions had been carried out in great island Borneo, which lies between Natuna and Celebes, there is no record of *Xanthostemon* in plant species lists; the genus is completely absent throughout Borneo. The distribution pattern of the genus, with its center in New Caledonia, had showed disjunction by this finding. It could have existed previously in Borneo and surrounding islands as well, but subsequently become restricted to Natuna. Since the genus is not known in Borneo, the occurrence of *X. natunae* in Natuna is evidence of vicariance.

Vernacular name. *Pelawan Punai* (Natuna).

Traditional use. The bark is taken, and the "dust" on its surface is traditionally applied onto the face and skin as mosquito repellent and sunscreen by forest wanderers.

Specimen examined. Natuna Islands, Pulau Natuna Besar, Gunung Sekunyam: *F.N. Rangkuti, S.M. Leksono & A. Sedayu ST0239* (BO).

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REFERENCES

DAWSON, J.W. 1992. *Xanthostemon* F. Mueller. *Flore de la Nouvelle-Caledonie* 18: 162–216.

MERRILL, E.D. 1952. Notes on *Xanthostemon* F. Mueller and *Kjellbergiodendron* Burret. *Journal of Arnold Arboretum* 33: 150–161.

STEENIS, C.G.G.J. VAN. 1932. Botanical results of a trip to the Anambas and Natoena Islands with "Notes on the vegetation of Djemadja" by M.R. Henderson. *Bulletin du Jardin Botanique de Buitenzorg*. ser III. 12: 151–211.

WILSON, P.G. 1990. A revision of the genus *Xanthostemon* (Myrtaceae) in Australia. *Telopea* 3: 451–603.

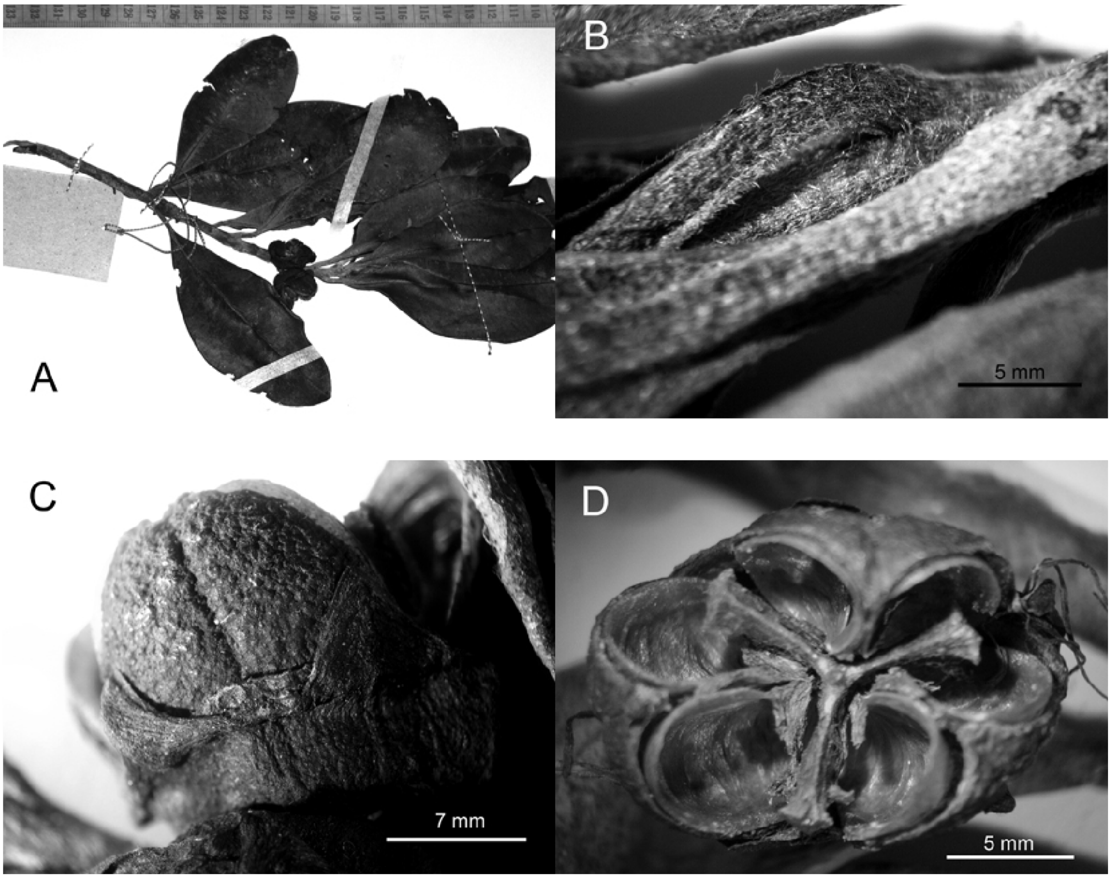

Fig. 1. *Xanthostemon natunae* Sedayu. A. Infructescence, B. Twigs and base of petiole with trichomes, C. Capsule with sulcus, D. Dehiscing capsule showing placentation. Photos taken from specimen *F.N. Rangkuti, S.M. Leksono & A. Sedayu PI0240* (BO).